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OF THE

ACTING POMOLOGIST

FOR

1900.

BY

WM. A. TAYLOR.

[FROM ANNUAL REPORTS, DEPARTMENT OF AGRICULTURE.]



WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1900.

CONTENTS.

	Page.
Work of the year.....	59
Routine work.....	59
Distribution of trees, scions, cuttings, plants, and seeds.....	59
Experiments with European table grapes in the South Atlantic States....	60
Card catalogue.....	60
Exhibit at the Paris Exposition.....	61
Current work.....	62
Plans for the ensuing year and recommendations.....	62

REPORT OF THE ACTING POMOLOGIST.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF POMOLOGY,
Washington, D. C., September 1, 1900.

SIR: In the absence of the Pomologist, Col. G. B. Brackett, I have the honor to transmit herewith a report of the work of the Division of Pomology for the fiscal year ending June 30, 1900, with a brief outline of work of the current fiscal year, and a statement of plans and estimates for the work of the Division for the fiscal year 1902.

Respectfully,

WM. A. TAYLOR,
Acting Pomologist.

Hon. JAMES WILSON, *Secretary.*

WORK OF THE YEAR.

ROUTINE WORK.

The work of the Division has continued along the same lines as in former years, the most important new work undertaken during the year having been the collection and installation of the horticultural exhibit at the Paris Exposition. The regular correspondence continues to increase, the usual wide range of subjects relating to fruits and their culture being covered. The total correspondence has been much larger than in any previous year in the history of the Division, over 5,000 letters having been written, in addition to a large routine correspondence by means of circulars.

Receipts of specimens by mail continue to increase as compared with former years. A large proportion of the fruits received in this way are sent by growers for identification, nearly 50 per cent of all lots received during the year having been sent for this purpose. As this work yields a direct and valuable return to the fruit grower, and therefore constitutes one of the most useful features of the work of the Division, it is gladly undertaken and encouraged.

During the year about 525 fruit descriptions, 260 water-color paintings, a considerable number of photographic negatives, 185 wax models, and about 200 mounted herbarium sheets have been added to the collections.

DISTRIBUTION OF TREES, SCIONS, CUTTINGS, PLANTS, AND SEEDS.

The cooperative work with the Section of Seed and Plant Introduction, referred to in the last report, has been continued during the year just closed. This promises to become more useful as more of the desired species and varieties are secured for testing and as closer relations are established with individual experimenters. During the

year over 700 lots of such material have been placed with about 125 experimenters, either official or private, in different parts of the country. More than 200 varieties, representing 22 species, have been thus distributed. The most important items in the distribution have been European table grapes, of which about 100 varieties have been distributed. The improved facilities for handling large collections of plants afforded by the new packing rooms of the Section of Seed and Plant Introduction render the labor attendant upon such distribution much less severe than heretofore, and also make it possible to forward the plants in much better condition than formerly.

EXPERIMENTS WITH EUROPEAN TABLE GRAPES IN THE SOUTH ATLANTIC STATES.

The effort to give the culture of the choice European table grape a thorough test in the South Atlantic States has been continued at Southern Pines, N. C., and Earleton, Fla. Vines of such varieties of the first importation (that of 1899) as failed to grow have been replaced so far as possible, and as many additional sorts of supposed merit as were obtainable on resistant stocks have been secured. The collection at Earleton is reported to have made a very thrifty growth, and to have continued almost entirely free from leaf diseases during the summer of 1899. It is also reported to be in thrifty condition at the present time. The collection at Southern Pines, on the deep and sterile sandy soil of the long-leaf pine belt, has made a less thrifty growth, and a larger number of vines failed to grow here than at Earleton. More difficulty with leaf diseases has been experienced here also. This is probably due in some measure to the close proximity of large vineyards of American varieties, composed mainly of Niagara and Delaware, in which black rot and mildew have been prevalent for several years, and which continue to be a source of infection to the more susceptible European varieties. A collection of about 40 varieties grafted on Niagara stocks at this place two years before the Department experiments began suffered considerably from black rot on both leaves and fruit during the summer of 1899, though a number of varieties were apparently not more injured by it than was Niagara in the same locality. It is gratifying to record that the phenomenal cold weather of February, 1899, injured but few of the unprotected vines of these varieties seriously. Most of the varieties have made a strong growth and several are now carrying a full crop of fruit, which under ordinary climatic conditions should make possible an approximate determination of their quality and a forecast of their probable usefulness as market grapes in that region.

CARD CATALOGUE.

The illness of Mr. T. T. Lyon, of Michigan, for many years an expert and capable special agent of the Division, resulted in his death during the present fiscal year. The card catalogue, the preparation of which had been intrusted to Mr. Lyon from the beginning, because of his special fitness for the work, was left incomplete by his death, the apples, pears, and peaches described in standard American pomological works having been completed as heretofore noted. The completion of this work has been placed in charge of Prof. W. H. Ragan, of Indiana, who has been actively engaged upon it during the latter half of the fiscal year. During this time the plums and grapes have been

catalogued. The catalogue of plums now contains about 2,300 cards, of which more than 1,000 represent distinct varieties, and about 1,300 are of recognized synonyms. The catalogue of grapes contains nearly 2,700 cards, of which more than 1,400 represent distinct varieties, and nearly 1,300 are of recognized synonyms. The importance of early completion and publication of this catalogue becomes increasingly apparent.

EXHIBIT AT THE PARIS EXPOSITION.

As indicated in the report of last year, the organization and preparation of the horticultural exhibit of the United States at the Paris Exposition has required a large expenditure of time and energy. As this was the first attempt to make a comprehensive exhibit of American horticulture and horticultural products at a foreign exposition, it was considered important that the showing should be worthy of that great industry, bearing in mind the ultimate effect of such an exhibit upon foreign demand for our products.

Exhibits of horticultural implements, seeds, plants, illustrations, etc., were accordingly solicited, with the result that a creditable representation from the United States was secured in five of the six classes into which Group VIII, Horticulture, of the exposition classification was divided. These exhibits were forwarded to Paris during the winter, and in February the assistant pomologist, who had been in immediate charge of their collection, was detailed to install them in Paris. As fruit culture is generally recognized as the largest and most important feature of American horticulture, it was decided to give it special prominence by maintaining a continuous fresh-fruit exhibit from the opening to the close of the exposition. Under an agreement with the Commissioner-General, by which the cost of transportation, storage, and installation of such exhibits was paid from the exposition appropriation, contributions of the more durable fruits, especially apples and oranges, of the crop of 1899, were solicited from horticultural societies, State commissions, and similar organizations, as well as from individual growers in all parts of the country. As a result of this, a quantity of choice winter apples, equal to about 300 barrels, representing seventeen States, was placed in refrigerated storage at seven conveniently located points in the apple-producing territory during the autumn of 1899. The California exposition commission undertook to furnish a sufficient supply of oranges to maintain a continuous exhibit of that fruit and also to provide successive shipments of deciduous fruits of the crop of 1900 as these matured.

Preliminary investigation having revealed the fact that fruit refrigeration, as practiced in this country, was unknown in France, a suitable chamber for the reserve supply was constructed in a meat-storage establishment at Havre, the seaport of Paris. A refrigerated compartment on an ocean steamer was secured, and the apple exhibits were successfully assembled in refrigerator cars at New York in March, during a period of very stormy weather, when railroad travel was much interrupted. These exhibits were transported to Southampton, England, from which point they were transferred on a small steamer to Havre, and placed in storage March 23, 1900. Special credit for the assembling and successful transportation of this fruit, as well as for assistance in collecting exhibits, is due to Mr. H. M. Dunlap, president of the Illinois State Horticultural Society, who, as a special employee of the Paris Exposition Commission, rendered valu-

able services in this connection and throughout the period of installation of exhibits.

The foreign section of the Palace of Horticulture, in which was the space allotted to the United States, being still incomplete on the day of the formal opening of the exposition, it was found impossible to install exhibits until after that date. Since May 9, however, when the first installation was completed, the exhibit has been continuously maintained in good condition. It is worthy of note that a large proportion of the apples of the crop of 1900 displayed were exceptionally choice fruit, and were in excellent condition when unpacked for exhibition. This is especially gratifying in view of the prolonged hot weather of the autumn of 1899, which resulted in unprecedented losses by dealers of fruit in transit and in storage during the autumn and winter. It furnishes a conclusive demonstration of the practicability of greatly prolonging the marketing season for this fruit where proper precautions are taken in selecting, handling, and storing. Under a continuation of the arrangements made last year regular shipments of fruits of the present season are being forwarded, and these will be kept up until the close of the exposition.

The exhibit from the outset attracted wide attention, and distinctly beneficial results to the fruit industry may reasonably be expected from it.

No other country has attempted to maintain a continuous fruit exhibit, even the French section being bare of fruit during at least two-thirds of the time.

CURRENT WORK.

In addition to the regular work of the Division, which may be expected to require additional attention in view of its steady growth, the maintenance of the fruit exhibit at Paris will require continued attention. The presence of the Pomologist in Paris to superintend the exhibit during most of the first half of the fiscal year is highly probable in view of the constant supervision and attention required by such an exhibit.

The preparation and installation of a suitable exhibit at the Pan-American Exposition to be held in Buffalo, N. Y., in 1901, will also require attention.

Field work of observation and investigation, which is needed in several important lines, can not be undertaken under existing circumstances.

PLANS FOR THE ENSUING YEAR AND RECOMMENDATIONS.

The effort to introduce the culture of the European table grapes in the South Atlantic States makes important a careful study of those varieties and of the methods of pruning, cultivating, fertilizing, etc., as well as the methods of combating the diseases which affect them. The superior quality of these varieties, which have been developed to their present excellence as the result of many centuries of cultivation and selection in the Old World, renders their production here highly desirable to both producer and consumer. It is believed that a large demand at good prices would quickly arise when they are once produced in considerable quantity. The necessary work on this subject can be done best in cooperation with the Section of Seed and Plant Introduction and the Division of Vegetable Physiology and Pathology, and I would therefore respectfully recommend a sufficient

increase in the appropriation for pomological investigations to render this possible early in the calendar year 1901.

Some of the most serious problems that confront the fruit grower are those connected with the questions of harvesting, packing, and marketing the product. This has been found especially true in relation to the export trade in fresh fruits. In numerous instances efforts to increase the sale and use of American fresh fruits in foreign markets have failed through the imperfect understanding that exists among growers, packers, and shippers, as well as transportation companies and their employees, in regard to the requirements of the markets to be supplied and the methods of harvesting, packing, storing, and shipping necessary to meet those requirements. The development of that steady demand which is necessary to build up trade is in many cases retarded by the variability in condition of consignments on arrival. A shipment which arrives perfectly sound and in every respect satisfactory is frequently followed by one or more that arrive in bad condition. The result is loss of confidence in the reliability of American fruit as a staple article of trade and a disastrous lowering of prices. For these reasons it seems highly important that provision be made for a careful study of methods of harvesting, packing, storing, and transporting fresh fruits, both at home and abroad, with special reference to the development of the export trade in them. Authority to make experimental shipments should also be provided for in this connection. In addition to the immediate beneficial effect resulting from such an investigation, it would have a direct bearing on the selection of varieties for the commercial orchards now being planted in many sections of the country, and thus exercise an important influence on the character of the commercial fruit supply of the next two decades. It is therefore strongly urged that provision be made for the prosecution of this work during the coming fiscal year.

What is in some respects the most important work of this Division, namely, the accurate mapping of the districts adapted to the commercially profitable culture of the important fruits, still remains practically untouched, and can not be undertaken until a larger appropriation is available. Thousands of acres of trees and vines are annually planted on soils and sites manifestly unsuitable because of adverse conditions of soil or climate or of the prevalence of disastrous diseases. The data obtainable at the present time bearing upon this question consist chiefly of disconnected reports from growers more or less isolated, and until systematic field work can be undertaken accurate outlining of fruit districts is impossible. On the other hand, a rapid personal survey of doubtful areas by skilled observers, in connection with the accumulated data, and such incidental investigations of soils, prevailing plant diseases, and perhaps of injurious insects as may be found necessary, would yield results of immediate and great value to fruit growers. This work should be undertaken at an early date by this Division, in cooperation with the Divisions of Soils and Vegetable Physiology and Pathology and the State experiment stations, and I would respectfully recommend that a sufficient increase in appropriation be included in the estimates to make a beginning of such work possible during the coming fiscal year.